

Mid-IR Imaging & Spectroscopy of L 1641-N

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Progress Report on ISOCAM Star-Formation Templates

CVF & broad-band data

CVF Templates

- B 335
- L 1555
- Finish this list

Data Reduction

What We do have figured out:

- Dark Current
- De-Glitching (Auto & Manual)
- Transient (F-S) ... more or less

Data Reduction

Problems:

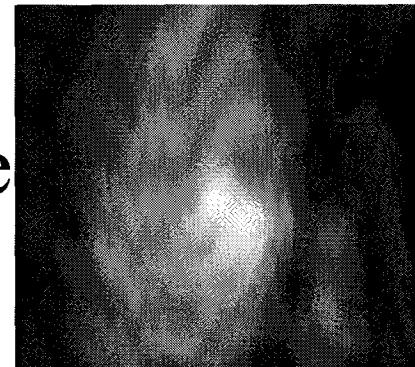
- Transients
- Flat-Fielding
- Flux Calibration

L 1641-N

- Both broad-band & CVF coverage.
- LW2 6.75 microns
- LW3 15 microns
- CVF1 5 – 9 microns
- CVF2 9 – 18 microns

Background on L 1641-N

- IRAS discovered point source
- Optically invisible CO outflow (Fukui et al 86)
- Near-IR follow-up
 - Strom et al '89
 - Chen et al '93
- Large number of HH objects (Reipurth et al '98)



Previous results (cont.)

- 2-4" displacement between near-IR and L'- and M-band images (scattered light ... from embedded sources?)
- One source only seen at >4 um

IMAGING OF *IRAS* SOURCES

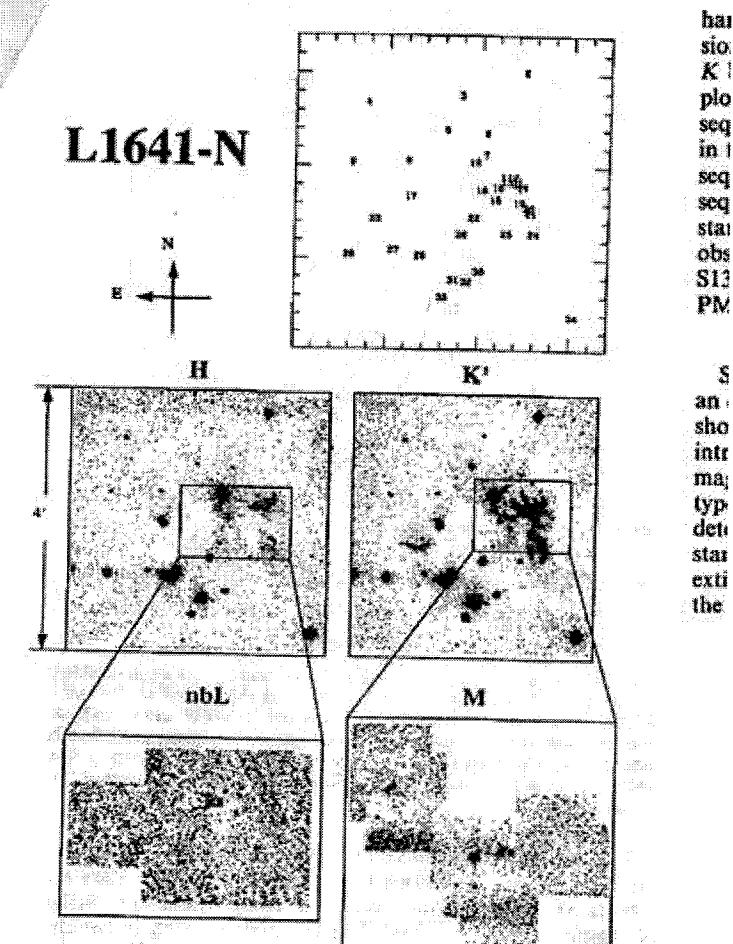
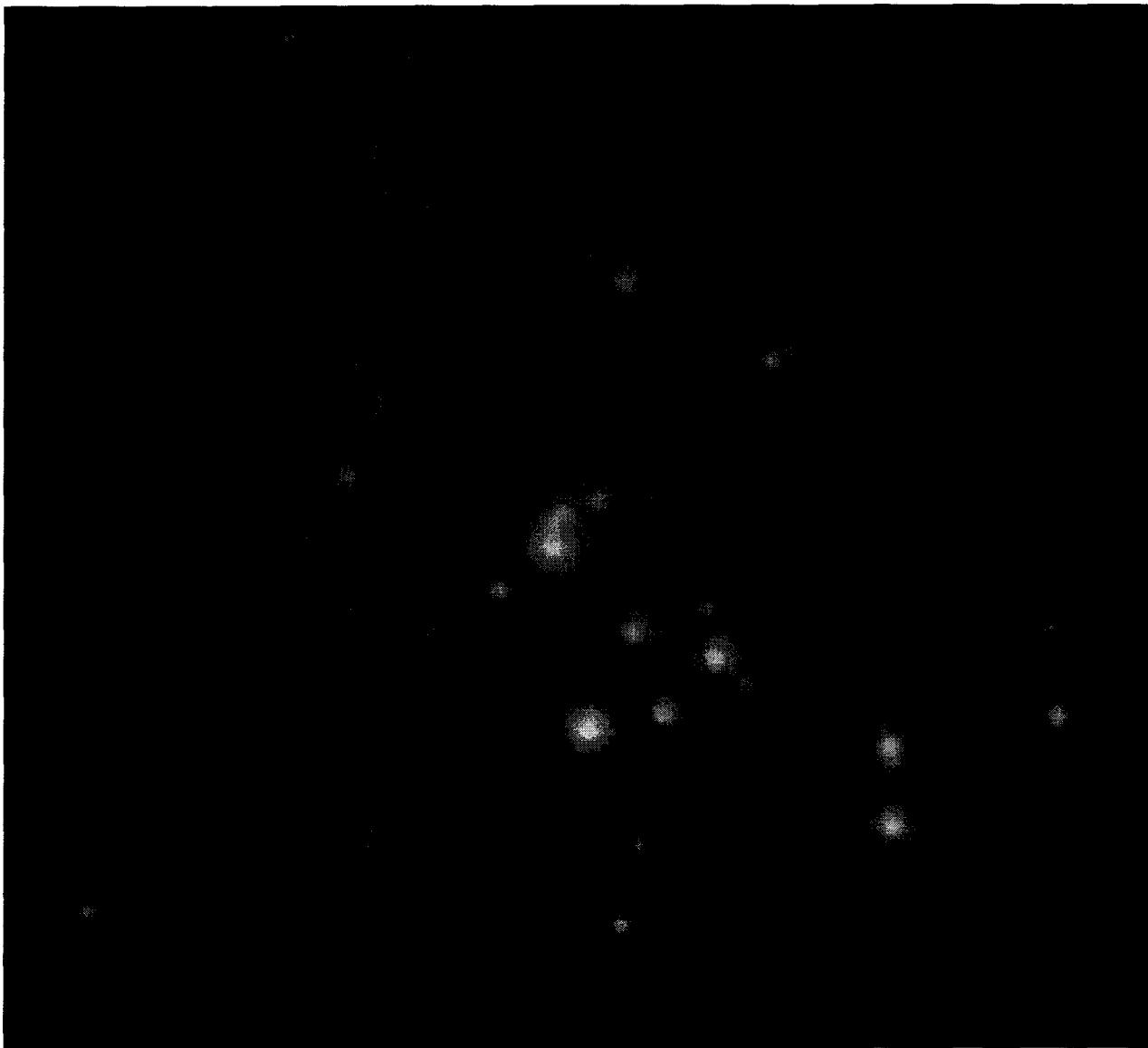


FIG. 1.—*H*, *K'*, *nbl*, and *M* images of L1641-N. The *H* and *K'* images cover a $4'' \times 4''$ region at the same scale. The *nbl* and *M* images cover much smaller areas and are shown at an enlarged scale. The top panel shows the source numbers used in Table 3. The *IRAS* position is marked by the cross (+).

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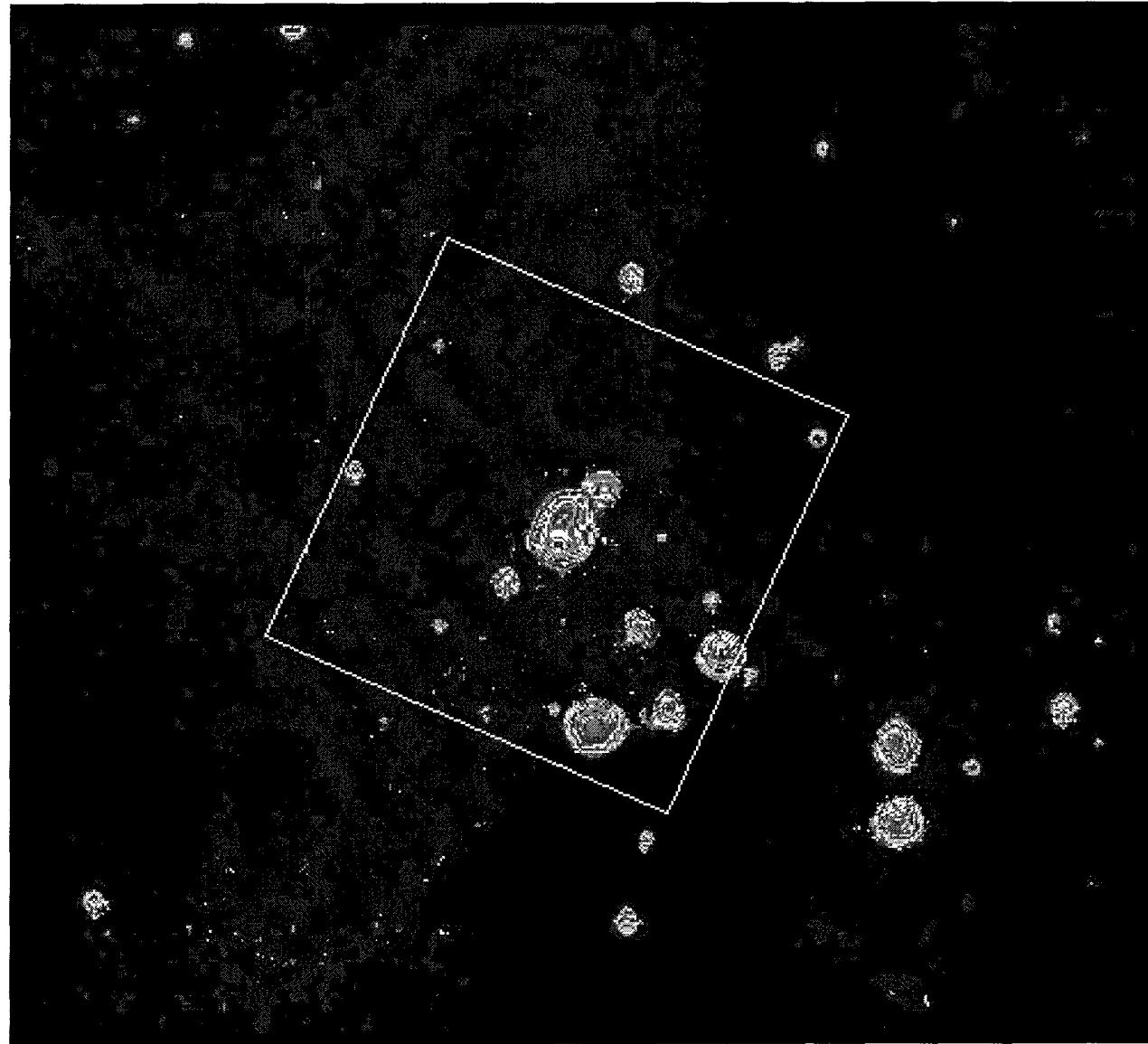
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22 Feb 2001

GISS II

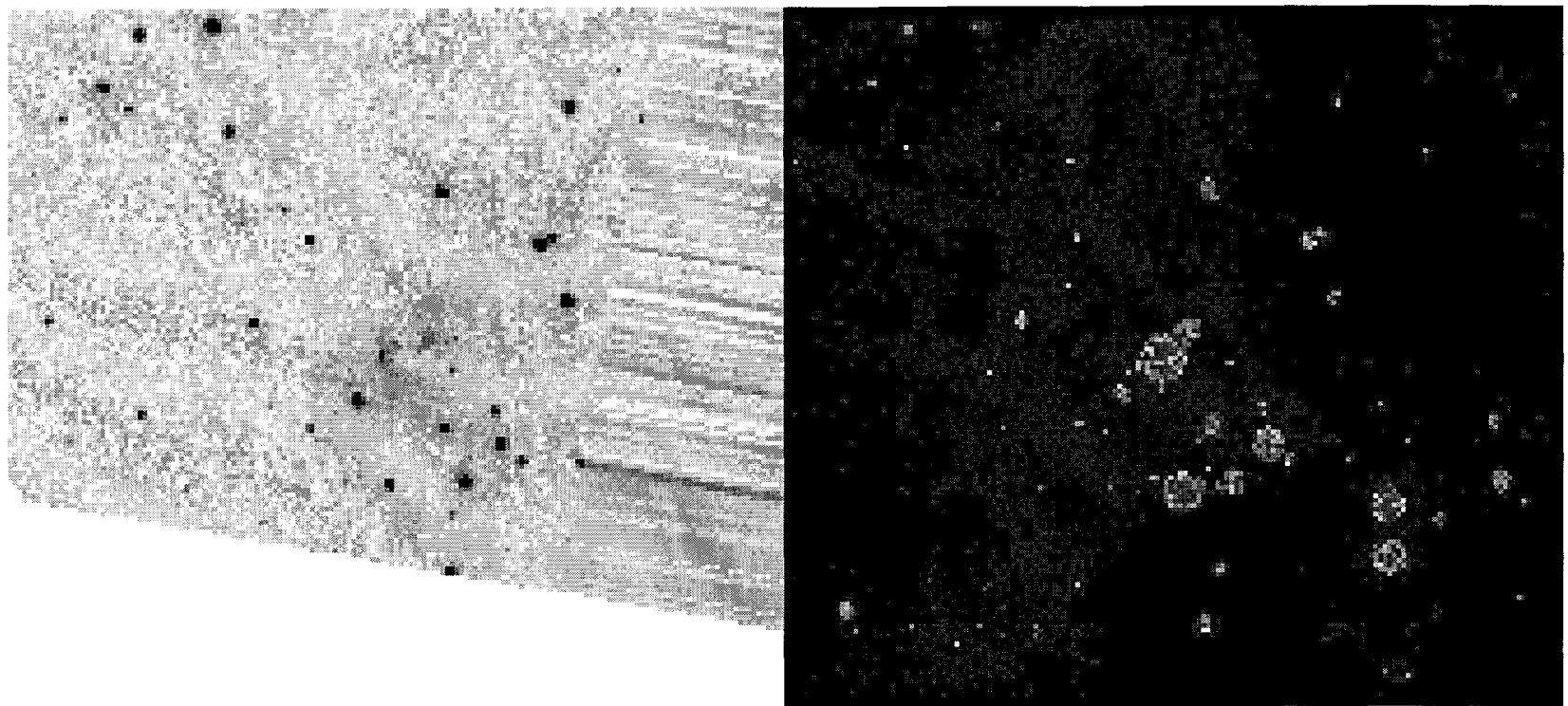
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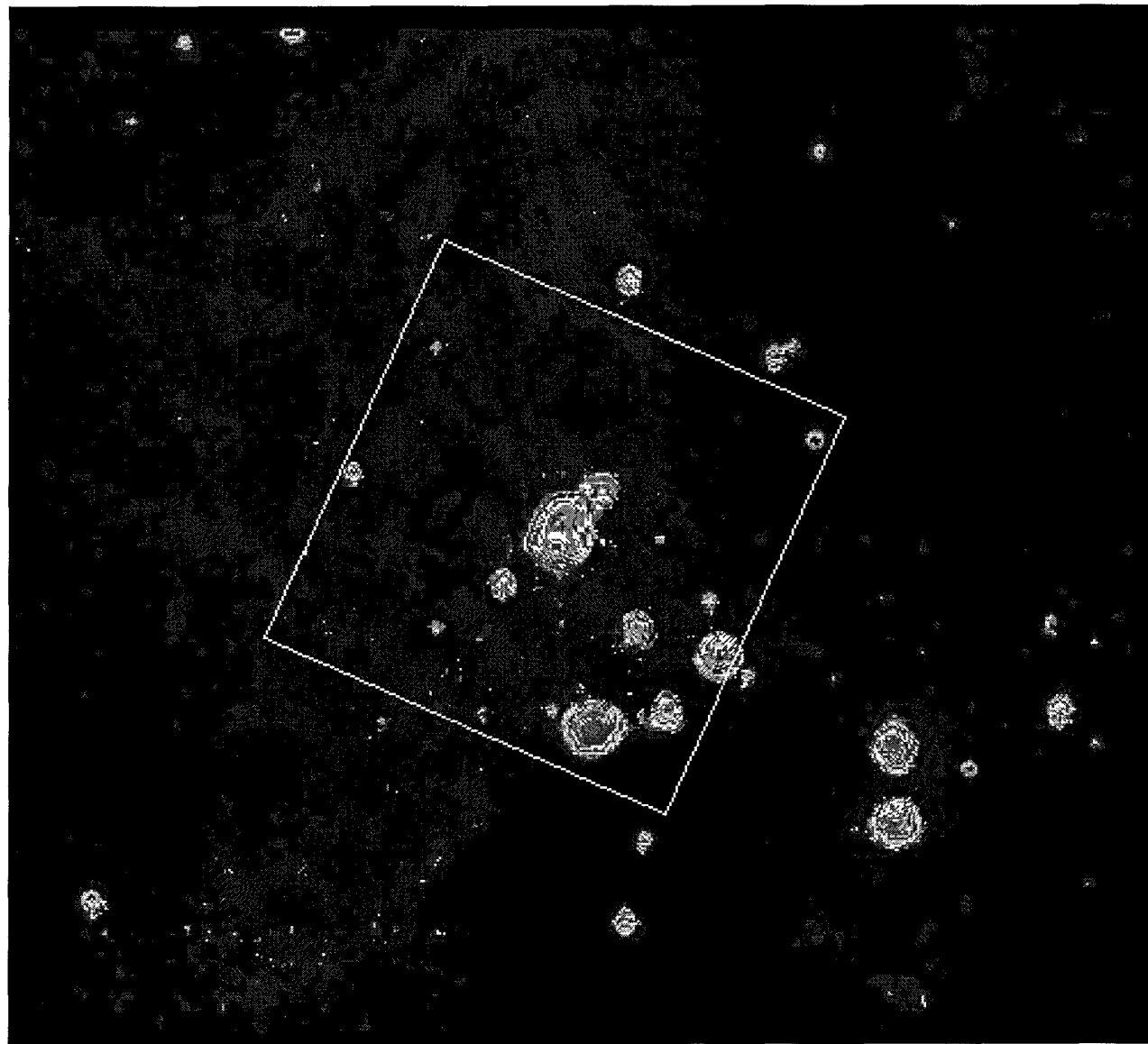
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GISS II

12

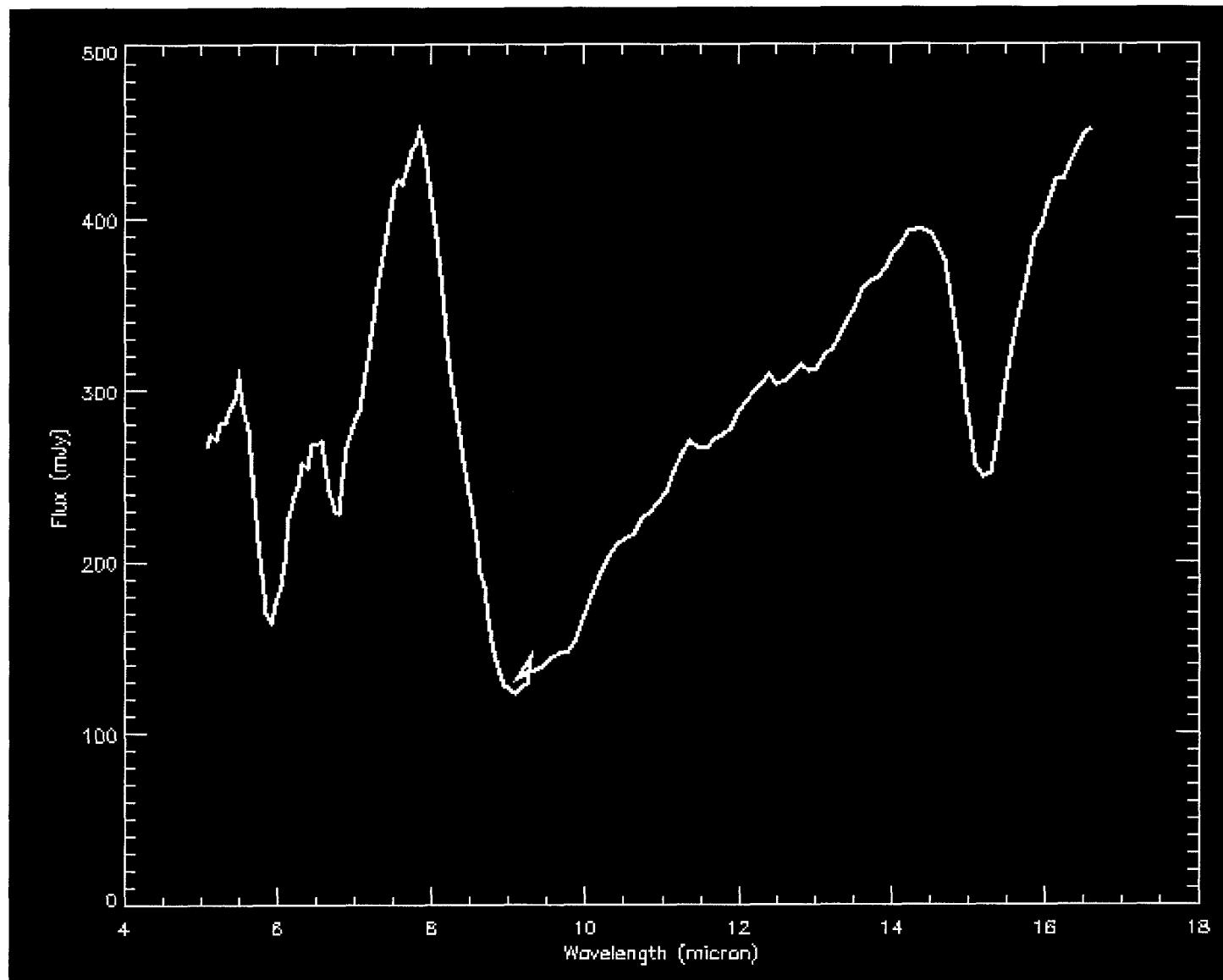


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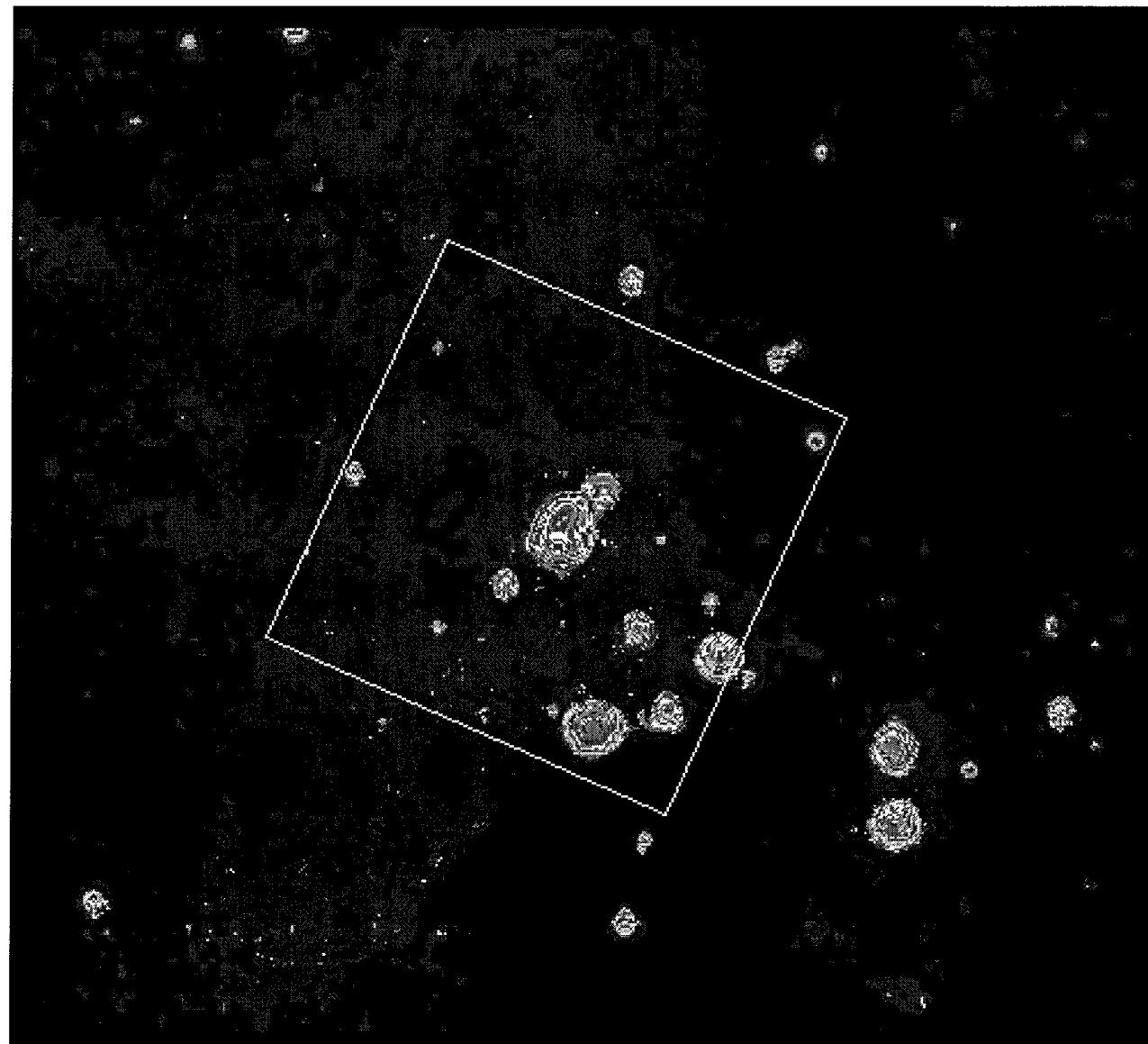
Star 18



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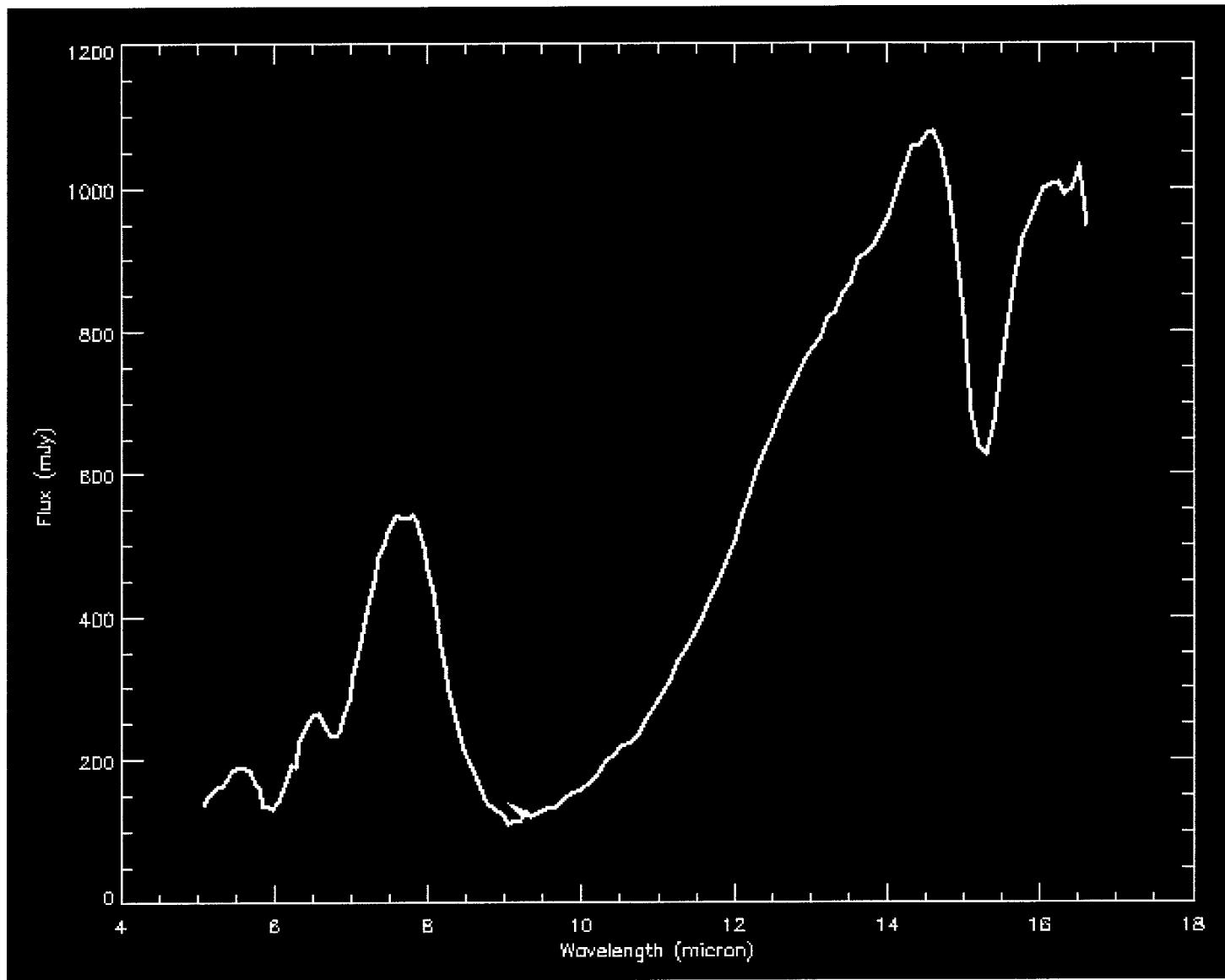


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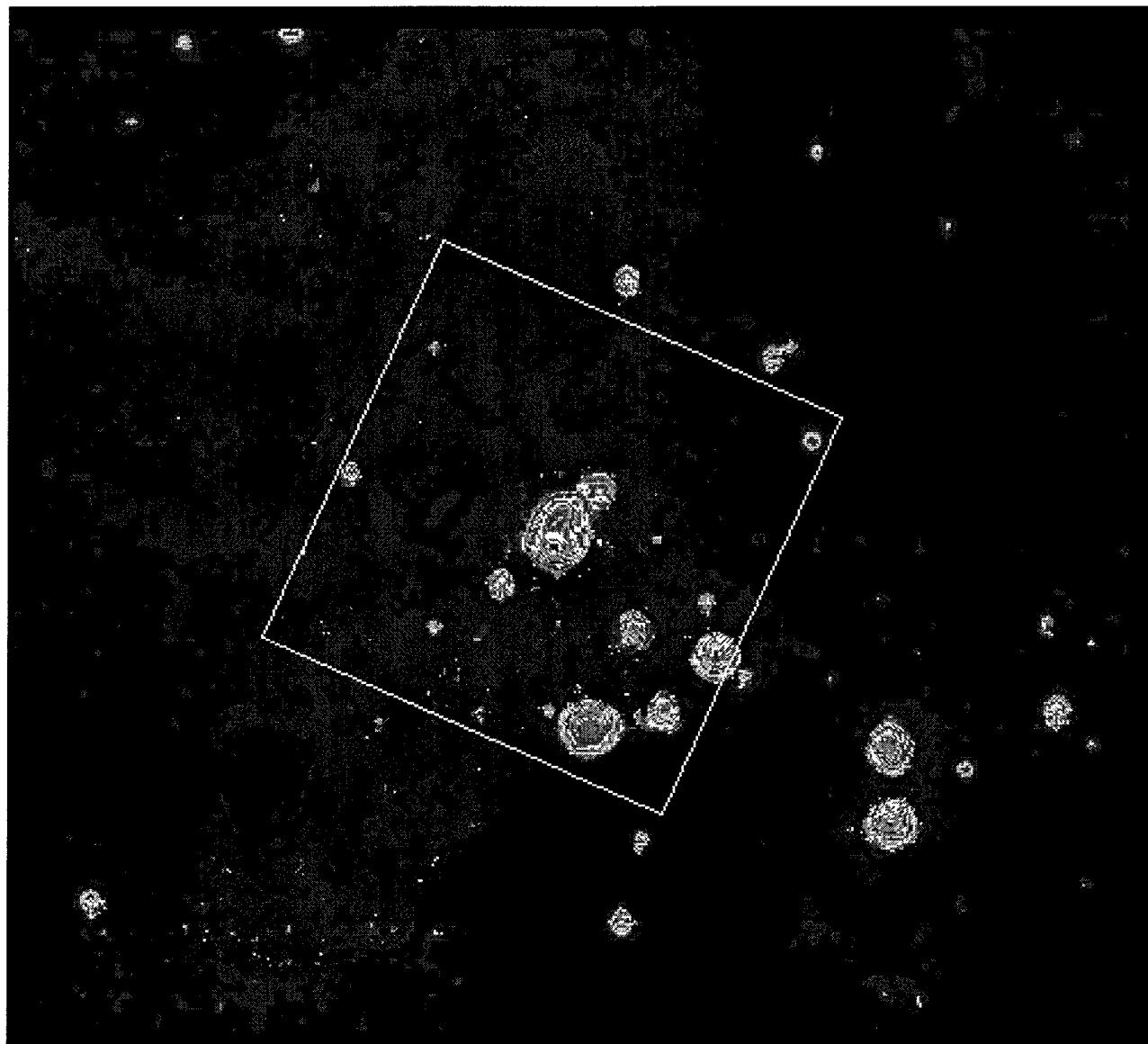
Star 10



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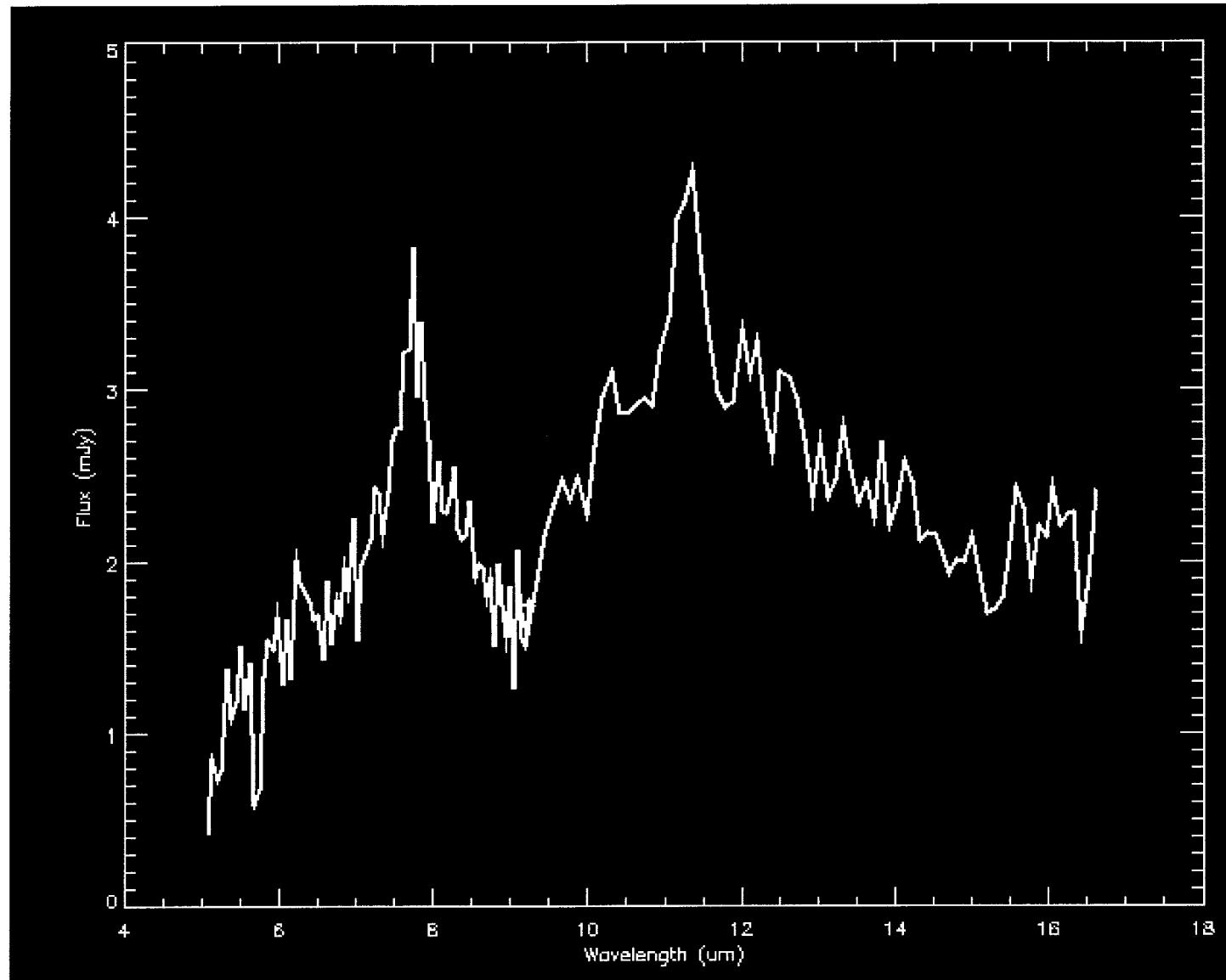


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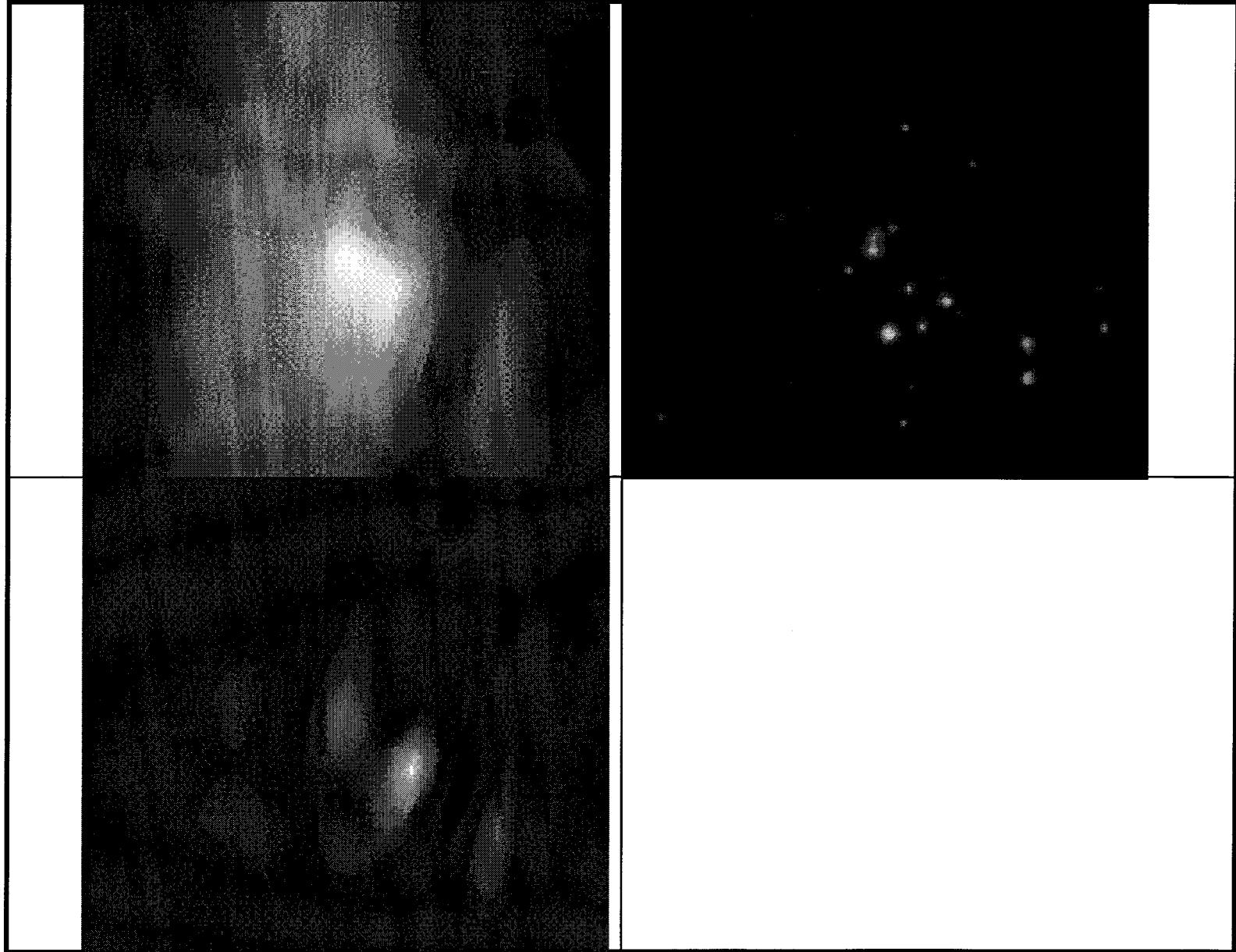
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Extended Emission



The IRAS point source?

- Chen et al. suggest star 18
 - Within 2" of IRAS co-ordinates
 - Only detected at > 4 microns
- ISO CVF
 - Star 18 284 mJy
 - Star 10 481 mJy
 - IRAS 481 mJy (really!!)
- But, star 10 is \sim 1 arc-min away.



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Summary

- Several young embedded stars (hints from previous studies)
- IRAS “source” likely to be star 10 or multiple sources
- Also not seen in near-IR, diffuse emission (PDR?)

Summary

- From previous work
 - Dynamical age of outflows (10^4 - 10^5 yrs)
 - HH objects

ISO = embedded sources

One of the youngest & most active regions of Orion

Summary

- Finally,

Contrast this with Trapezium. Same molecular cloud but very different styles of star-formation

of sources

Density of sources